

What is claimed is:

1. A semiconductor integrated circuit device,
comprising:

an internal supply generating means for generating,
from an external supply voltage that is externally input,
an internal supply voltage at which a logic circuit is
operated; and

a level shift means for shift a voltage amplitude
level of a signal input to and output from said logic
circuit.

2. The semiconductor integrated circuit device
according to claim 1,

wherein said internal supply generating means
includes:

a high voltage supply generating unit for generating
a high voltage internal power supply from a high voltage
external power supply of said external supply voltage; and

a low voltage supply generating unit for generating a
low voltage internal power supply from a low voltage
external power supply of said external supply voltage,

in which a high voltage internal power supply and a
low voltage internal power supply, generated from said high
voltage supply generating unit and said low voltage supply
generating unit, are used as internal supply voltages and
are supplied to said logic circuit.

3. The semiconductor integrated circuit device
according to claim 2,

wherein said high voltage supply generating unit includes:

a first voltage comparing unit comparing voltage levels of a first reference voltage and a high voltage internal power supply generated by said high voltage supply generating unit, and outputting a first internal control signal changing its voltage in accordance with a difference between the voltage levels; and

a first internal supply generating unit having a structure in which a plurality of power supply transistors are connected in parallel between said high voltage external power supply and said high voltage internal power supply and a first internal control signal, output by said first supply comparing unit, is input to each gate of said plurality of power supply transistors, and driving said plurality of power supply transistors in accordance with said first internal control signal to generate said high voltage internal power supply, and

wherein said low voltage supply generating unit includes:

a second voltage comparing unit comparing voltage levels of a second reference voltage and a low voltage internal power supply generated by said low voltage supply generating unit, and outputting a second internal control signal changing its voltage in accordance with a difference between the voltage levels; and

a second internal supply generating unit having a

structure in which a plurality of power supply transistors are connected in parallel between said low voltage external power supply and said low voltage internal power supply and said second internal control signal, output by said second voltage comparing unit, is input to each gate of said plurality of power supply transistors, and driving said plurality of power supply transistors in accordance with said second internal control signal to generate said low voltage internal power supply.

4. The semiconductor integrated circuit device according to claim 2,

wherein said high voltage supply generating unit includes:

a first voltage comparing unit comparing voltage levels of a first reference voltage and a high voltage internal power supply generated by said high voltage supply generating unit, and outputting a first internal control signal changing its voltage in accordance with a difference between the voltage levels; and

a first internal supply controlling unit provided with a first duty control circuit, which generates a pulse signal having an arbitrary duty ratio in accordance with a first internal control signal output from said first voltage comparing unit, and with a plurality of power supply transistors, which are connected in parallel between said high voltage external power supply and said high voltage internal power supply and to each gate of which a

pulse signal, output from said first duty control circuit,
in which said first internal supply controlling unit
generates said high voltage internal power supply by
driving said plurality of power supply transistors in
accordance with said pulse signal, and

wherein said low voltage supply generating unit
includes:

a second voltage comparing unit comparing voltage
levels of a second reference voltage and a low voltage
internal power supply generated by said low voltage supply
generating unit, and outputting a second internal control
signal changing its voltage in accordance with a difference
between the voltage levels; and

a second internal supply controlling unit provided
with a second duty control circuit, which generates a pulse
signal having an arbitrary duty ratio in accordance with a
second internal control signal output from said second
voltage comparing unit, and with a plurality of power
supply transistors, which are connected in parallel between
said low voltage external power supply and said low voltage
internal power supply and to each gate of which a pulse
signal, output from said second duty control circuit, is
input,

in which said second internal supply controlling unit
generates said low voltage internal power supply by driving
said plurality of power supply transistors in accordance
with said pulse signal.

5. The semiconductor integrated circuit device according to claim 3,

wherein said first and second voltage comparing units stopping said plurality of power supply transistors in accordance with a input setting signal, and electrically separate said high voltage external power supply and said high voltage internal power supply, as well as said low voltage external power supply and said low voltage internal power supply, respectively.

6. The semiconductor integrated circuit device according to claim 5,

wherein said high voltage supply generating unit includes:

a first transistor connected between said high voltage internal power supply and said high voltage external power supply, and conducted when said first voltage comparing unit electrically separates said high voltage external power supply and said high voltage internal power supply in accordance with a control signal, and

wherein said low voltage supply generating unit includes:

a second transistor connected between said low voltage internal power supply and said low voltage external power supply, and conducted when said second voltage comparing unit electrically separates said low voltage external power supply and said low voltage internal power

supply in accordance with a control signal.

7. The semiconductor integrated circuit device according to claim 1,

wherein an ESD protection device, serving as a supply capacitor, is provided between internal supply voltages generated by said internal supply generating unit.

8. The semiconductor integrated circuit device according to claim 1,

wherein each of said first internal supply controlling unit, said second internal supply controlling unit, and said ESD protection device is provided two or more in number, thereby being dispersedly disposed on a semiconductor chip.

9. The semiconductor integrated circuit device according to claim 2,

wherein a reference voltage generating unit for generating said first and second reference voltages is provided.

10. The semiconductor integrated circuit device according to claim 1,

wherein said level shifter includes:

a first level shift unit shifting, into a signal amplitude of an external supply voltage level, a signal amplitude of an internal supply voltage level output from said logic circuit, and

a second level shift unit shifting, into a signal amplitude of an internal supply voltage level at which said

logic circuit is operated, a signal amplitude of an external supply voltage level having been input externally.

11. An electronic system comprising:

a semiconductor integrated circuit device including an internal supply voltage generating means for generating, from an external supply voltage that is externally input, an internal supply voltage at which a logic circuit is operated; and

an electronic component mounting board for mounting said semiconductor integrated circuit device.

12. The electronic system according to claim 11, wherein said internal supply voltage generating means includes:

a high voltage supply generating unit generating a high voltage internal power supply, from a high voltage external power supply of an external supply voltage supplied through a power supply wire formed on said electronic component mounting board; and

a low voltage supply generating unit generating a low voltage internal power supply, from a low voltage external power supply of an external supply voltage supplied through a power supply wire formed on said electronic component mounting board,

in which said high voltage internal power supply and said low voltage internal power supply, generated by said high voltage supply generating unit and said low voltage supply generating unit, are used as internal supply

voltages and are supplied to said logic circuit.

13. The electronic system according to claim 12, wherein said high voltage supply generating unit includes:

a first voltage comparing unit comparing voltage levels of a first reference voltage and a high voltage internal power supply generated by said high voltage supply generating unit, and outputting a first internal control signal changing its voltage in accordance with a difference between the voltage levels; and

a first internal supply controlling unit having a structure in which a plurality of power supply transistors are connected in parallel between said high voltage external power supply and said high voltage internal power supply and said high voltage internal power supply and a first internal control signal, output by said first voltage comparing unit, is input to each gate of said plurality of power supply transistors, and driving said plurality of power supply transistors in accordance with said first internal control signal to generate said high voltage internal power supply, and

wherein said low voltage supply generating unit includes:

a second voltage comparing unit comparing voltage levels of a second reference voltage and a low voltage internal power supply generated by said low voltage supply generating unit, and outputting a second internal control

signal changing its value in accordance with a difference between the voltage levels; and

a second internal supply controlling unit having a structure in which a plurality of power supply transistors are connected in parallel between said low voltage external power supply and said low voltage internal power supply and said second internal control signal, output by said second voltage comparing unit, is input to each gate of said plurality of power supply transistors, and driving said plurality of power supply transistors in accordance with said second internal control signal to generate said low voltage internal power supply.